AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) A method for processing an image acquired by means of a guide consisting of a plurality of optical fibres, comprising:

~~wherein,~~ for each optical fibre, isolating a zone corresponding to the optical fibre ~~is isolated~~ on the acquired image,

wherein each zone is locally processed individually by:

calculating a flux for each zone on the acquired image,

calculating a flux for each of a plurality of zones on a set of reference images comprising a parasite background image and an adjustment image, and

calibrating the fluxes of the acquired image using the fluxes of the set of reference images; and

~~then the~~ reconstructing the acquired image ~~is reconstructed~~ from the calibrated fluxes of the acquired image so as to eliminate[[ing]] a pattern due to the optical fibres.

2. (Previously Presented) The method according to claim 1, wherein, in order to isolate each zone, a mask, corresponding to the pattern of the fibres, is applied to the acquired image.

3. (Previously Presented) The method according to claim 2, wherein the mask, corresponding to an image of related components representing each fibre, is obtained during a stage of detecting the fibres from a reference image.

4. (Previously Presented) The method according to claim 3, wherein the stage of detecting the fibres comprises the following stages:

prefiltering of the reference image,

segmentation by region,

correction of segments having an abnormally large surface, and

correction of segments having an abnormally small surface.

5. (Previously Presented) The method according to claim 4, wherein the two corrections stages are interchangeable.

6. (Previously Presented) The method according to claim 4, wherein the two corrections stages are carried out in an iterative way.

7. (Previously Presented) The method according to claim 4, wherein the prefiltering stage comprises a morphological opening stage followed by an image-inversion stage.

8. (Previously Presented) The method according to claim 7, wherein the image-inversion stage is preceded by a scalar-type anisotropic scattering stage.

9. (Previously Presented) The method according to claim 4, wherein the prefiltering also comprises a stage during which an interpolation to the nearest neighbour is carried out in order to double the size of the image vertically and horizontally.

10. (Previously Presented) The method according to claim 4, wherein, in the presence of a plurality of acquisition images, the prefiltering also comprises a temporal filtering stage.

11. (Previously Presented) The method according to claim 1, wherein the local processing of each zone consists of calculating the photon flux detected for each zone of the acquired image, and correcting the bias on each thus-calculated flux value.

12. (Previously Presented) The method according to claim 11, wherein the flux is calculated using an estimator of maximum likelihood calculated on a specific injection profile of each fibre.

13. (Currently Amended) The method according to claim 7, wherein, also applying the mask on the parasite background image ~~an image representing a parasite background, the photon flux detected for each zone of the background image is also calculated~~, and the flux value of each zone of the corresponding background image is subtracted from each flux value of each zone of the acquired image, and [[the]] a bias correction is carried out on the result of this subtraction.

14. (Previously Presented) The method according to claim 13, wherein the parasite background comes from the background of the image.

15. (Previously Presented) The method according to claim 13, wherein the parasite background comes from the calculation of an offset of the detection chain.

16. (Previously Presented) The method according to claim 11, wherein the bias correction consists of spatially separating the fibres into different blocks, estimating the bias value in each block, interpolating the bias values so as to obtain a bias value for each fibre, and dividing, for each zone, the flux value obtained in the preceding stage by the thus-obtained corresponding bias value.

17. (Currently Amended) The method according to claim 1, wherein the reconstruction of the acquired image involves ~~a calibration stage in order to calibrate the flux of the acquired image, after local processing, and~~ a mosaic reconstruction stage.

18. (Currently Amended) The method according to claim [[17]] 1, wherein, for the calibration and for each zone of the acquired image, the flux value obtained after local processing is divided by a flux value obtained following an adjustment stage.

19. (Currently Amended) The method according to claim 18, wherein the adjustment stage consists of:

isolating each zone of [[an]] the adjustment image applying the mask, corresponding to the pattern of the fibres, to [[this]] the adjustment image,

calculating the photon flux detected for each zone of the adjustment image, and

correcting the bias on each thus-calculated flux value.

20. (Previously Presented) The method according to claim 19, wherein the flux is calculated using an estimator of maximum likelihood calculated on the specific injection profile of each fibre.

21. (Currently Amended) The method according to claim 18, wherein, also applying the mask to the parasite background image ~~an image representing a parasite background, the photon flux~~

~~detected for each zone of the background image is also calculated~~, the flux value of each zone of the corresponding background image is subtracted from each flux value of each zone of the adjustment image, and the bias correction is carried out on the result of this subtraction.

22. (Currently Amended) The method according to claim 21, wherein the parasite background comes from [[the]] a background of the image.

23. (Currently Amended) The method according to claim 21, wherein the parasite background comes from [[the]] a calculation of an offset and from the noise of the detection chain.

24. (Currently Amended) The method according to claim 17, wherein the mosaic reconstruction stage consists of distributing, over the whole surface of each zone of the acquired image, the flux value of each zone obtained following the calibration stage.

25. (Previously Presented) The method according to claim 24, wherein a low-pass filtering is carried out so as to make the reconstructed acquired image more regular.

26. (Previously Presented) The method according to claim 3, wherein the reference image is an image obtained by placing a mirror opposite the guide.

27. (Previously Presented) The method according to claim 3, wherein the reference image is an image obtained from a homogeneous scattering medium.

28. (Previously Presented) The method according to claim 3, wherein the reference image is an image obtained from a homogeneous fluorescent medium.

29. (Previously Presented) The method according to claim 3, wherein the reference image is an image obtained from the backscattering inside the bundle of optical fibres constituting the guide.

30. (Previously Presented) The method according to claim 3, wherein the reference image is the acquired image.

31. (Previously Presented) The method according to claim 19, wherein the reference image and the adjustment image are identical.

32. (Currently Amended) An apparatus for image acquisition using a guide made up of a plurality of optical fibres and for implementing a method for processing an image acquired by means of a guide consisting of the plurality of optical fibres, ~~and implementing a method according to claim 1, wherein, for each optical fibre,~~ the apparatus comprising[[es]]:

for each optical fibre:

means for isolating, on the acquired image, a zone corresponding to [[this]] each optical fibre;

means for locally processing each zone individually by:

calculating a flux for each zone on the acquired image,

calculating a flux for each of a plurality of zones on a set of reference images comprising a parasite background image and an adjustment image, and

calibrating the fluxes of the acquired image using the fluxes of the set of reference images; and

means for reconstructing the acquired image from the calibrated fluxes of the acquired image so as to eliminate[[ing]] a [[the]] pattern due to the optical fibres.

33. (Previously Presented) The apparatus according to claim 32, wherein the apparatus comprises means for modifying the sampling rate, the quality of injection into the optical fibres, and the setting of a detection chain in order to guarantee an "egg box" profile.

34. (Previously Presented) The application of the image-processing method according to claim 1 for one of the following fields:

monitoring of the roughness of the surface of the guide;

re-setting of the images, or stabilization of the image;

super-resolution of an acquired image;

quantization of images; and

the temporal control of the internal parameters of the acquisition apparatus.